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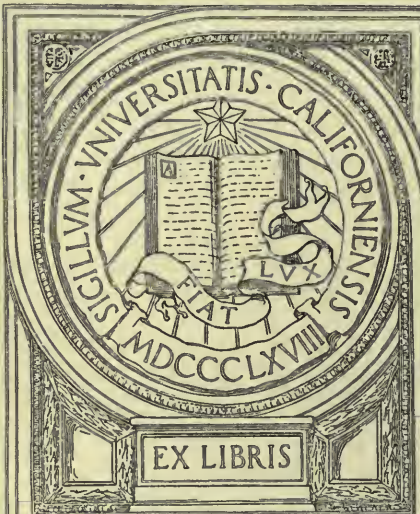
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Project Teaching: Pupils Planning
Practical Activities

By
Samuel Chester Parker

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PROJECT TEACHING: PUPILS PLANNING PRACTICAL ACTIVITIES

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PROJECT TEACHING: PUPILS PLANNING PRACTICAL ACTIVITIES

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ARTICLE I

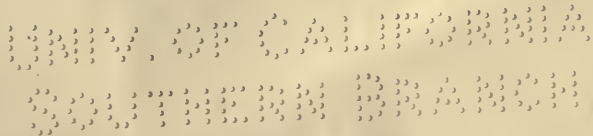
Divisions of the discussion.—The following discussion of project teaching will be divided into seven sections: I. Definition; II. Recent examples; III. Historical development; IV. Values; V. Limitations; VI. Technique; VII. Conclusions.

I. DEFINITION OF PROJECT TEACHING

Pupils planning practical activities.—The central element in project teaching is the planning by pupils of some practical activity, something to be done. Hence, a pupil-project is any unit of activity that makes the pupils responsible for such practical planning. It gives them practice in devising ways and means and in selecting and rejecting methods of achieving some definite practical end. This conception conforms with the dictionary definition of a project as “something of a practical nature thrown out for the consideration of its being done” and with the dictionary statement that “to project” means “to contrive, to devise, to scheme.” Furthermore, it describes with considerable precision a specific kind of improved teaching that has become common in progressive experimental schools since 1900.²

¹ The word “practical” is here used as the opposite of “theoretical” according to the following definitions from *Webster's Dictionary*: “*Practical*. 1. Of or pertaining to practice or action. 2. Capable of being turned to use or account; useful in distinction from *ideal* or *theoretical*; as *practical chemistry*.” “*Theoretical*. Pertaining to theory; depending on, or confined to, theory or speculation; speculative; terminating in theory or speculation; not practical; as *theoretical learning*; *theoretic sciences*.”

² Perhaps the briefest definition of a project for our purposes would read as follows: *A pupil-project is a unit of practical activity planned by the pupils.* The author has revised the use of the term “project” in his *General Methods of Teaching in Elementary Schools* (Ginn & Co.) to conform to this more precise meaning and has added in the revised edition (1922) a brief chapter on project teaching along the lines of this article.



II. RECENT EXAMPLES OF PROJECT TEACHING

Historical construction projects. Variations in pupils' planning.—We may illustrate project teaching, as well as the pertinency of our definition, by three similar pictures of projects in medieval history. In these cases three different fifth-grade classes of the University of Chicago Elementary School all had the same practical problem of illustrating certain phases of medieval life; yet the outcomes varied greatly owing to the variations in the pupils' planning. The nature of the pupil-activities in developing such a project is suggested by the following description:

The castle and fortified town shown in [Fig. 1] were constructed out of cardboard by a fifth-grade class which was studying the Feudal Age in European history. The children had read the stories of King Arthur and other knights, as well as descriptions of life in town and castle. On the basis of this reading, they planned an imaginary mediaeval town and castle as shown in the drawings on the blackboard. They then constructed the walls and buildings from cardboard coated with a preparation of flour and salt to resemble stone. Certain parts were colored with coffee, water colors, etc.

The fortified town shown on the left contained one building for each type of craftsman or merchant, the tailor, the metal worker, the importer of baled goods, etc. In the public square was shown a mediaeval fair. The crowded condition of a mediaeval town was brought out by the narrow streets and overhanging second stories of the houses. On the right is the castle of the baron who was lord of the region. Between the town and the castle are the feudal lands, owned by the baron, and cultivated in strips according to mediaeval practices.

Too small to be seen in the picture is a procession of knights proceeding from the castle to the town to attend the fair. On the blackboard in the left-center are sketches of historical costumes in which the little dolls representing the characters were dressed.

The next fifth-grade class which worked on this project constructed a historical castle instead of an imaginary one. They chose the castle of Kenilworth and from books of travel, encyclopedias, etc., obtained the details of its construction. Later they wrote a play centering in a visit of Queen Elizabeth to Kenilworth and the return of Drake from one of his voyages. As a piece of co-operative work in English the class wrote the following poem concerning their work:

OUR CASTLE IN THE SAND-PAN

Within our sand-pan straight and long,
We've built an ancient castle strong;

ABROUJA O DO VINU
HONANB MANTUOS



FIG. 1.—Fifth-grade construction project in medieval history to be contrasted with Figs. 2 and 3 to illustrate the influence of pupil-planning.

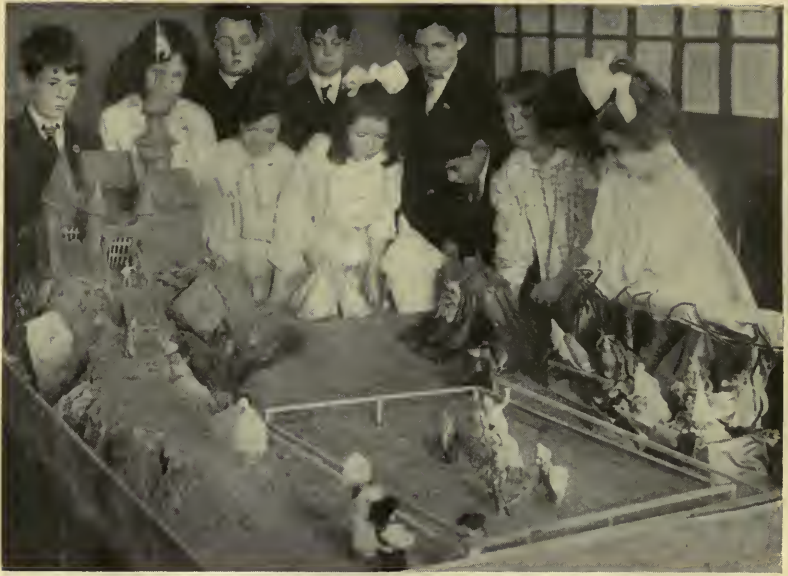


FIG. 2.—Another fifth-grade project in medieval history. Contrast the castle in this picture with the one in Fig. 1.



FIG. 3.—Another town-and-castle project. The same problem for the pupils as in Fig. 1; note the different outcomes from the pupils' practical planning.

It has some battlemented towers
That guard the lovely ladies' bowers;
A moat that's deep and wide around,
And green grass growing on the ground.

We now have built a mighty keep,
Also a hall where knights do sleep.
We've built a wall around the grotto
Which we have carved with Leicester's motto.

Our Kenilworth is fair and gay
With banners floating all the day,
For good Queen Bess in royal array
Is coming in her barge this day.
All loyal hearts these means employ,
To show how full they are of joy.¹

A composition project.—The writing of this poem illustrates project teaching in English composition and helps us to realize that not all projects involve manual construction. In this particular case this fifth-grade class had been discussing what contribution they should make to the school periodical which was edited and printed by the pupils. They decided to write an account of their "Castle in the Sand-Pan." Each pupil wrote independently, and then the class listened to several of the compositions. One pupil had written his in verse form, and the class decided to tinker this composition and publish it. The outcome was the poem presented.

Subdivided labor on a class project.—The part played by the subdivision of labor on a class project may be illustrated by Figure 2. The children who constructed this scene had read Howard Pyle's *King Arthur* and had listened to Scott's description of the tournament scene in *Ivanhoe*. After considerable discussion and planning, a committee of three children constructed in plasticine the castle shown at the left. For its plan they followed the large illustration shown hanging in Figures 1 and 3. Other children constructed the moat, the roadway, and the inclosure for the tournament. Many children were engaged in constructing the pavilions on the right for the king and queen and the lords and ladies. The costumes

¹ S. C. Parker, *General Methods of Teaching in Elementary Schools*, pp. 8-10. Boston: Ginn & Co., 1919.

for the doll characters called for considerable knowledge and ingenuity. The periods for manual training and for history for about one week centered in this project.

How a teacher attacks a class project.—The manner in which an experienced project teacher attacks the actual development of a project by a class is charmingly suggested by the following quotation from an account by Miss Jennie Hall¹ of the activities of a fourth-grade class in preparing a dramatization of a certain portion of the story of Achilles to be presented to the Francis W. Parker School at the morning assembly. The description reads in part as follows:

With a theme that so enlisted feeling, we should surely get vigorous, creative acting. So I suggested² making a play. As always, the idea was hailed with joy.

Many times before this I had had experience with plays so sliced up into acts that drawing the curtain had occupied more time than the dialogue. My excuse to myself had been that that was the way the children had planned it. But I had now begun to think that it was as much my business to supervise³ children's play-making as their number work, and not to let their untrained habits run riot there any more than among the multiplication tables. So I took a short cut and said: "Now, let's not try to tell the whole story of Achilles in our play, but just his getting angry and getting over it." The suggestion was adopted.

Now attention was focused upon a small area of the story, and some fullness of delineation was possible. There is always, I suppose, a good deal of vagueness and delay in the attack. When your boat lies beached, it takes much shouting and running about to get it launched. "What is going to happen first?" was our starting question. "The quarrel," was the class

¹ Miss Hall was one of the most skilful and valuable teachers in America's experimental schools. She was author of a notable series of children's history stories, including "Viking Tales," "Our Ancestors in Europe," "The Story of Chicago," etc. She died in 1921.

² This statement illustrates the fact that some of the best educative pupil-projects, perhaps most of them, originate in some suggestion by the teacher. This parallels situations in social life where projects are frequently suggested by one person, but planned and carried out largely by others.

³ This paragraph shows how the teacher may be a very strong directing force in the development of a pupil-project and yet leave large scope for active pupil-planning and -scheming, as will appear in the later paragraphs. This again parallels situations in social life where the director of a business or other enterprise may exert a strong guidance in the various projects of the organization, but at the same time give his subordinates considerable scope for initiative, scheming, and planning.

answer. Now, to be sure, not all the children at once cried one answer in one voice. But the same thing happened that we have all seen occur in a large social group—be it a class of children or a political convention. Some original genius ventured a suggestion. This released the gears in other brains, and more suggestions came. Analytical minds saw difficulties and advantages; opinions were modified, and new suggestions made, until one came that brought a glow and nod of satisfaction from the majority of the class. That one we adopted, and we then moved forward at my command, for creation must go on with a dash, while the fife and drums are playing. So any piece of composite work . . . hints at dead and wounded ideas and lost causes along the line of march. Generally it is worth while to stop and argue out a moot point, but if there is a sign that the interest of the majority is flagging, up standards and forward! and leave the malcontents to clamor. "What shall happen next? and next?" So we worked out our plot-quarrel, meeting to discuss how to get Achilles back, Achilles' refusal to return, death of Patroclus, reconciliation of Achilles and Agamemnon. The children pondered the plot with delight. The climax perfectly satisfied them. Achilles and Agamemnon should shake hands and say, "Let bygones be bygones," and we could forgive Achilles and be happy.

This planning was all done in one day. The next morning, I saw that the children were hungry for acting, and that they must not be put off with further planning of details. I chose the most enthusiastic volunteers for Achilles and Agamemnon and Calchas. They came up to act and flatly failed—could not think of a word to say. Then I asked, "Well, what could they say?" We heard any speech that anybody had to offer, picked another troupe and tried again. Next day there was less eagerness about volunteering to act, and someone explained: "You get up there and you don't know what to say." So we thereupon set about planning the speeches of the scene.¹

How pupils discuss and organize a project.—A concrete notion of what the pupils actually say and do during their planning of a project may be derived from the following stenographic report of the discussion by a fourth grade that was preparing an assembly exercise in the Francis W. Parker School on the poet Blake whose poems and life they had been studying. After the class had discussed the desirability of preparing the exercise the conversation continued as follows:

Robert G.: If it is just going to be Blake's poems, I think we should tell something about him.

¹ *Second Yearbook of the Francis W. Parker School*, pp. 29-30. Chicago: Francis W. Parker School (330 Webster Avenue), 1913. \$0.45. The best publication on assembly projects.

Teacher: How many like that idea? (Many hands.)

Teacher: What things shall we tell about him? (Teacher writes topics on the board as they are suggested.)

Child: Where he was born.

Child: What he was interested in.

Child: His visions.

Teacher: What visions?

Child: When he saw the child in the cloud.

Child: The tree full of angels.

Child: Fairy's funeral.

Child: The men he saw go to the altar—the apostles.

Miriam: One time he was sitting on the seashore, and saw the kings and all the pages, and the people going along the shore.

Karl: And once when his brother died, he thought he saw his soul go up to heaven.

Mary: How he came to write his poems and how he learned to engrave.

Charles: You would not call it sculpture if he engraved things.

Teacher: Who will set Charles right?

Charles: A sculptor makes statues from marble and an engraver carves great stones.

Teacher: No.

Further planning and discussion followed, and certain children volunteered to prepare to talk upon the various topics outlined on the board. The next day the lesson proceeded as follows:

(On the board was the list of points planned the day before, with names of children volunteering to talk on each topic.) *Teacher:* Yesterday we began to plan our morning exercises about Blake. Without my saying anything, let the children come in the order in which their names appear on the board. And remember that you must connect with one another, so the story will be complete.

Several children then gave the talks they had prepared, after which a critical discussion of their performances began as follows:

Teacher: What do you think? Does that do what you want done for the story? I am not asking you to choose the people who seem to you to do it best, but whether you think it is right for the story of Blake's life. Or are there things left out, or is it not pleasant the way it is planned?

Child: I don't like the way some of them said he saw his brother's soul clapping his hands.

Teacher: But that is what Blake said.

Robert G.: I think someone ought to tell about his engraving.

Mary: I thought you only wanted the drawing. I can change it.

Teacher: It is not true, Mary, that he did most of his drawing before he was married. He went on all his life. All the famous book drawings he made later in life. And Fred, you gave me the impression that Blake did not know very much.

Frederick: Well, he did not go to school, did he?

Teacher: No, but he studied and was an educated man.

Frances: He said he got his education from reading. He read all the time.

Teacher: What do you think about what René had to say, John?

John: I don't think it was quite enough.

Child: I think he ought to tell more dates, when he started engraving and some things.

Teacher: How many were interested in what René said? (A few hands.) How many were not? (Many hands.)

Teacher: Why was it that what he said was not interesting?²

This critical discussion with further planning continued on the second day until satisfactory schemes were devised. On the third and fourth days the aspiring performers were further tried out in the classroom. Finally, the children who were chosen to present the exercise to the morning assembly of the school rehearsed once in the assembly hall.

Over two hundred projects in National Society Yearbook.—One of the most suggestive collections of examples of project teaching is the *Twentieth Yearbook of the National Society for the Study of Education, Part I.*² This contains brief accounts of 285 examples of teaching, many of which involve practical planning by pupils. The great variety of opportunities for such practical planning in progressive school work is suggested by the following titles of a few of the projects described in this yearbook: "A Kindergarten Circus," "A Doll Sale," "The 'We Like It' Cafeteria," "Dramatization of 'The Hardy Tin Soldier,'" "An Imaginary Trip Around the World," "A Celebration for Columbus Day," "A Picture Museum," "Publishing an Annual," "Helping the Humane Society," "A School Magazine," "A Cleanliness Campaign," "Raising Potatoes," "Cleaning a Vineyard and Planting Trees," "Forming a Mercantile Company,"

Conclusions of recent examples.—Such examples as we have given in this section should serve to give the reader a concrete

¹ *Op. cit.*, pp. 19-26.

² Bloomington, Illinois: Public School Publishing Co., 1921. \$1.30 postpaid.

notion of the extensive and varied examples of project teaching to be found in American schools. In the next section we shall further clarify our ideas of project teaching by examples showing how provision for such practical planning by pupils has developed historically.

III. HISTORY OF RECENT OPPORTUNITIES FOR PRACTICAL PLANNING BY PUPILS

A. GENERAL DEVELOPMENTS: THE "NEW EDUCATION" OF 1880-1905

Slogans of the "new education"; "self-expression," etc.—The movement to give pupils practice in practical planning is one outcome of the "new education" which was widely discussed in America during the last decades of the nineteenth century. The principal slogans of this "new education" were "self-realization," "self-expression," "education through expression," "initiative," "co-operation," etc. Its advocates spoke and wrote of it as the "new education" on frequent occasions. Thus as early as 1883 we find Colonel F. W. Parker using the term, while in 1900 we find Professor Dewey referring to it with capitals and quotation marks in the following words:

It is to this, then, that I especially ask your attention: the effort to conceive what roughly may be termed the "New Education" in the light of larger changes in society. Can we connect this "New Education" with the general march of events? If we can, it will lose its isolated character. . . . It will appear as part and parcel of the whole social evolution.¹

Froebelian origin of the "new education." Teachers College, Colonel Parker, and Dewey.—There were at least two well-defined centers of this "new educational" practice and propaganda. One was Teachers College of New York City, the parent institution of which was established in 1880 and which became affiliated with Columbia University in 1898. The other was the School of Education of the University of Chicago, which developed in 1901 from the combining of the earlier schools of Colonel Francis W. Parker and Professor John Dewey. The common source of suggestion for the "new education" in these schools seems to have been the productive theories (not the formalized practices) of

¹ John Dewey, *The School and Society*, p. 4. Chicago: University of Chicago Press, 1900.

Froebel (1782-1852) who founded the kindergarten movement in Germany in 1837.¹ These theories will be presented later in a quotation from Dewey.

Teachers College.—The important part played by this Froebelian element in the early activities of Teachers College is suggested by a quotation from a series of resolutions adopted by its board of trustees in 1886. The institution was then known as the Industrial Education Association. In setting forth their policy they included the following resolution relative to the kindergarten:

That the fact is generally recognized among those best informed on the subject of education, that the kindergarten system produces the best results with young children. The Association claims that the system which combines industrial training with the usual and necessary branches is nothing more than a development of the kindergarten theory: a system found wise for young children, modified and adapted to children of more mature growth.²

Colonel Parker.—The part played by Froebelianism in Colonel Parker's work is clearly indicated by the following quotation from one of his writings as early as 1883:

Froebel said that the principles he discovered and advocated, when thoroughly applied, would revolutionize the world; and he was right. In the kindergarten is the seed corn and germination of the New Education and the new life. . . . One and all of the true principles of education are applied in the kindergarten; these principles should be applied (simply changing the application to adapt it to different stages of growth) through all education.³

Dewey.—Finally, the influence of the Froebelian theory in the experimental elementary school maintained by Dewey at the University of Chicago from 1896 to 1901 is indicated in these words taken from his discussion of the kindergarten department of his school:

One of the traditions of the school is of a visitor who, in its early days, called to see the kindergarten. On being told that the school had not as yet

¹ For an account of Froebel's two most valuable principles, namely, (1) education through motor expression and (2) education through social participation, see S. C. Parker's *History of Modern Elementary Education*, pp. 441-47 and 470-84. Boston: Ginn & Co., 1912.

² *Teachers College Record*, I (January, 1900), 14.

³ Francis W. Parker, *Talks on Teaching*, p. 159. New York: E. L. Kellogg & Co., 1883.

established one, she asked if there were not singing, drawing, manual training, plays and dramatizations, and attention to the children's social relations. When her questions were answered in the affirmative, she remarked, both triumphantly and indignantly, that that was what she understood by a kindergarten, and she did not know what was meant by saying that the school had no kindergarten. The remark was perhaps justified in spirit, if not in letter. At all events, it suggests that in a certain sense the school endeavors throughout its whole course—now including children between four and thirteen—to carry into effect certain principles which Froebel was perhaps the first consciously to set forth. Speaking still in general, these principles are:

1. That the primary business of the school is to train children in co-operative and mutually helpful living. . . .

2. That the primary root of all educative activity is in the instinctive, impulsive attitudes and activities of the child, and not in the presentation and application of external material. . . .

3. That these individual tendencies and activities are organized and directed through the uses made of them in keeping up the co-operative living already spoken of; taking advantage of them to reproduce on the child's plane, the typical doings and occupations of the larger, maturer society into which he is finally to go forth; and that it is through production and creative use that valuable knowledge is secured and clinched.

So far as these statements correctly represent Froebel's educational philosophy, the school should be regarded as its exponent.¹

Three movements from the "new education": motivation, problem-solving, and project teaching.—Out of the general enthusiasm for improved methods which characterized these discussions of the "new education" of 1900, there have developed from time to time specific enthusiasms for some special phase of teaching. For our present purposes it is instructive to note and define three of these, namely, motivation, problem-solving, and project teaching.

Motivation.—The central idea in the recent discussions of motivation seems to be that a pupil secures valuable training through clearly conceiving some interesting end toward which he directs his present activity and from which the latter derives interest. The writers on motivation have emphasized the desirability of well-defined pupil-purposes and whole-hearted interests as educative factors. Motivation thus becomes one phase of the doctrine of interest, and its adequate discussion would grow out of the

¹ *Elementary School Record*, I (June, 1900), 142. Published also in the revised edition of Dewey's *The School and Society*, p. 111. Chicago: University of Chicago Press, 1915.

consideration of human instincts and motives as found in such chapters as those by James and Thorndike on human instincts and in such books as McDougall's *Social Psychology*.

Problem-solving.—Training pupils in problem-solving has been most adequately treated in its theoretical aspects in Dewey's *How We Think*.¹ According to Dewey, problems originate in "something unexpected, queer, strange, funny or disconcerting" (p. 74), or in "some perplexity, confusion or doubt" (p. 12). The pupil has a "genuine problem," "in whatever perplexes and challenges the mind so as to make belief uncertain" (p. 9). A problem is thus seen to be "a question involving doubt" (as defined by Webster), and the specific discussion of training pupils in problem-solving would be based on the discussions of training in reasoning and scientific thinking provided by eminent psychologists. Clearly the issues and concepts involved in this discussion are largely distinct from those of motivation or interests.

Project teaching.—On the other hand, project teaching, when conceived as the pupil-planning of practical activities, is clearly a subdivision of the larger topic, problem-solving. In project teaching, the pupil is always confronted with some problem, but a problem of a *practical*² character, as distinguished from merely *theoretical* or *speculative* problems. Thus, a practical project problem in history might be "How shall we dramatize the life of Washington and his troops at Valley Forge?" while a theoretical problem would be "Who was the greater general, Washington or Frederick the Great?" In another connection, I have given a full discussion of problem-solving in general with examples of both theoretical and practical problems being solved by pupils.³ Our further discussion of *practical* project problems in the next article will supplement that discussion and show the development of project methods in manual training, assembly exercises, the kindergarten, geography, history, and agriculture.

¹ D. C. Heath & Co., 1910.

² See definitions of *practical* and *theoretical* on page 1.

³ *Elementary School Journal*, XXI (September-December, 1920). See also the author's *Types of Elementary Teaching*, chapter x. Boston: Ginn & Co. (in press).

ARTICLE II

III. HISTORY OF RECENT OPPORTUNITIES FOR PRACTICAL PLANNING
BY PUPILS—*Continued*

B. DEVELOPMENT OF PROJECT TEACHING IN SPECIAL APPLICATIONS

Manual training. Early sloyd system of imitative practical exercises.—Perhaps the first school subject to be extensively modified in actual practice by the “new education” of 1900 (which we described in the preceding article) was manual training. In the earlier development of this subject in this country, the exercises in woodwork had frequently been patterned after those of the Swedish sloyd, a system which originated about 1875. It was introduced into Boston about 1886 and was soon widely adopted in American manual-training schools. Among the articles made by pupils in this system were such practical things as a blackboard pointer, a penholder, a chopping board, a flowerpot stand, a hatchet handle, a tool rack, a book stand, etc. These articles were made in regular order by each pupil largely in imitation of the demonstrations by the instructor. I had the good fortune, as a high-school boy, to enjoy two years (1894–96) of such formal carpentering, two hours a day, in a manual-training school in Cincinnati. I made certain practical articles which are still in daily use in my boyhood home. During this practice I developed skills which have frequently proved useful in later life.

Project-planning advocated about 1900.—There was, however, very little of the element of original planning by the pupils in the system of Swedish sloyd practical exercises. On this account, the

Note on the “new education.”—Further light on the Froebelian element in the “new education” is shed by the statement that W. N. Hailman, a noted Froebelian, conducted a magazine, entitled the *New Education*, in Milwaukee, for six years beginning in 1876. Its editor said that Froebel and Herbert Spencer were the principal exponents of the “new education,” and that the journal was established to aid in the propagation of the views of Froebel and Spencer, particularly of the former. For further details see N. C. Vandewalker, *The Kindergarten in American Education*. New York: Macmillan Co., 1908. Pp. 32–33.

exercises began to be strongly condemned by various leaders of the "new education" about 1900.

Dewey on the "psychology of occupations."—Probably the most significant theoretical expression of the views on which the criticisms of the sloyd were based was Dewey's article entitled "The Psychology of Occupations," in which he defines an occupation as "a mode of activity on the part of the child which reproduces, or runs parallel to, some form of work carried on in social life." In speaking of the methods to be used in teaching occupations, he says:

It is possible to carry on this type of work . . . so that the entire emphasis falls upon the manual or physical side. . . . This is the inevitable tendency wherever, in manual training for instance, the mastery of certain tools, or the production of certain objects, is made the primary end, and the child is not given, wherever possible, intellectual responsibility for selecting the materials and instruments that are most fit, and given an opportunity to think out his own model and plan of work, led to perceive his own errors, and find out how to correct them—that is, of course, within the range of his capacities.¹

In the further discussion Dewey emphasizes the desirability of more "personal experimenting, planning, and re-inventing" in pupils' manual activities.

Colonel Parker opposed "logical sequence."—Similar views were debated in the meetings of the manual-training teachers as reported in the early volumes of the *Manual Training Magazine* (1901-3). Colonel Parker was frequently a vigorous speaker at these meetings and advocated a change from the "logical sequence" of the sloyd exercises to activities involving more original thought by the pupils.

C. R. Richards on pupil-planning.—One of the most effective pleaders for more pupil-planning in manual training was Professor C. R. Richards, whose strategic position as head of the department of manual training at Teachers College, Columbia University, gave him wide influence. Richards talked fluently the language of the "new education," especially emphasizing "self-realization" and "education through expression." He used the term "project"

¹ *Elementary School Record*, I (April, 1900), 83. Reprinted in *The School and Society*, p. 132. Chicago: University of Chicago Press, 1915 (revised).

occasionally in his early papers to designate the pupil's exercises, and in his later papers (particularly in the *Teachers College Record*) he used it predominantly. His ideas concerning the place of pupil-initiative and pupil-planning are brought out in the following quotation from an article in the *Manual Training Magazine*:

To bring the element of self-expression into handwork does not mean that we are to turn the pupil loose to exercise whim and fancy unrestrained. In handwork, no more than in any other form of school work, should the pupil be free from suggestion and guidance by the teacher. . . . Self-expression does not mean that the pupil is expected to develop the entire plan and design for each thing done. This would be too much to expect from the unformed standards of judgments of young children, and could result only in crude projects and unsatisfactory work. But recognition of this element may mean that the general plan to attain an end will be developed from the pupils. It may mean the adjusting and modifying of details within this general plan by the individual pupil; and it may mean the working out of ways and means to achieve this plan. It may mean these or many other things, but it should always mean that the worker's own thought and feeling are contributing in a real fashion to the end for which he is working.¹

From sloyd to projects and then a compromise.—The change from the systematic formal exercises of the Swedish sloyd to project exercises in which pupils did considerable original planning had taken place in a number of woodworking courses throughout the country by 1910. For example, about that time a teacher of manual training in a large city said to me,

We have considerable project work now. Thus, if a boy says he wants to make a coaster wagon, we tell him he may do so if he can show us suitable plans. However, the difficulty is that soon all of the boys are making coasters just like the first one, and it becomes purely imitative work just as in the formal exercises.

Many experienced observers of these reformed project courses felt that less tool skill was acquired than in the more systematic courses. Consequently, there was a reaction and a tendency developed to provide for both systematic tool practice and project-planning in certain institutions.

Kindergarten. From formal constructions to pupil-planning and experimenting.—Closely related to the change in manual training under the influence of general Froebelian principles is the change in

¹ C. R. Richards, "Handwork in the Primary School," *Manual Training Magazine*, III (October, 1901), 3.

kindergartens from highly systematized formal constructions to activities in which pupil-planning plays a much larger part. Dewey's influence was a large factor in bringing about this change. His conception of the need for it and of its harmony with Froebel's principles is expressed in the following paragraph which continues the quotation concerning Froebel's principles in Dewey's Chicago school given in the preceding article:

This attempt, however, to assume what might be called the kindergarten attitude throughout the whole school makes necessary certain modifications of the work done in what is more technically known as the kindergarten period—that is, with the children between the ages of four and six. It is necessary only to state reasons for believing that in spite of the apparently radical character of some of them they are true to the spirit of Froebel.¹

The nature of the reformed kindergarten practice which Dewey helped to bring about is well illustrated in the following quotation from the 1917 course of study of the University of Chicago Elementary School.

A means of organization is through objective projects, resulting in tangible, relatively permanent play centers. These are the house itself with its kitchen as the central feature, the grocery store, and the garden or farm.

When the children first come to school, they find, among other attractive things, such toys as dolls, some doll furniture, kitchen utensils, and dishes. They play with these freely, as they do also with blocks, sand, and clay. The teacher may easily lead this play in the direction of cooking and serving plays. There soon begins to take form in one corner of the room, therefore, a miniature kitchen or dining-room. The teacher then produces a screen house with a door and windows, which serves to inclose this little room, which may now stay in place as long as it is wanted.

This playhouse now becomes the center of great interest and activity. Clay utensils and dishes are made, a cupboard to hold them is built of blocks, paper is cut for the shelves, paper doilies are cut and fringed, napkins are folded, and a meal is planned. A trip to the grocery is necessary to buy a cereal, which is then cooked and served by the children. This trip to the store suggests the building of a grocery store in the classroom. This now becomes the second problem or project. It calls for much planning and experimenting and results very naturally in group work, since the final product is a structure made of blocks and boards which is large enough for three or four children to play in at the same time. Another excursion is needed to get suggestions as to how to make shelves, the counter, and show windows, and to learn what a

¹ *Elementary School Record*, I (June, 1900), 144. *The School and Society*, p. 112. Chicago: University of Chicago Press, 1915 (revised).

grocery store really carries for sale. Numerous lesser problems present themselves for the children's solving: vegetables and fruits of clay must be shaped and colored accurately enough to be readily recognized, and baskets made to hold them; paper bags must be contrived; pictures must be made to show what canned goods are in stock; pocketbooks and money for the buyers must be provided and delivery wagons constructed. These are not made from patterns or models, but are worked out by the children and the results tested by actual use in playing in the grocery store. The teacher aims so to direct the handwork that the children will grow steadily in their power to solve simple problems and handle material skilfully.

The third project, the farm or garden, is subordinate to the other two, partly because it is less familiar, partly because it is taken up again in the first grade. The oldest children sometimes make a miniature farm in the sand table, showing the grain fields, vegetable garden, orchard, and the main buildings and animal inclosures and shelters.¹

A notable series of papers which express further the change in kindergartens from formal imitative exercises to projects permitting of greater pupil-planning was published in the *Teachers College Record* for January, 1914 (Vol. XV), under the editorship of Miss Patty Hill, one of the leaders of the progressive reform movements among American kindergartners.

Assembly programs.—A third phase of school work in which we early find project-planning by the pupils being introduced is in assembly programs. As occasions for formal recitations and singing, such programs have been common from early times. The change to pupil-project programs, however, in which the pupils plan and devise the program and its activities, represents a radical addition to the training provided by such occasions. One of the most highly developed centers for such training was the school of Colonel Parker; and, today, probably the best account of such practice is found in the *Second Yearbook (1913) of the Francis W. Parker School*.²

Construction and dramatization in history and geography.—The assembly programs which the pupils devised frequently contained the presentation before the audience of some construction project from history or geography as illustrated in the pictures in the preceding article. Often the program included the dramatization

¹ *Elementary School Journal*, XVII (February, 1917), 401-2.

² Chicago: Francis W. Parker School, 330 Webster Avenue. \$0.45.

of some phase of history or literature as illustrated in the examples described in Section II of the first article. Similar projects frequently furnished centers for much classroom work in the social studies as illustrated in the kindergarten example given above.

Civic campaigns.—With the appearance of Dunn's *The Community and the Citizen*¹ in 1909, the attention of many teachers of civics was called to the possibility of active, practical pupil-undertakings in the civic life of the school or the local community. Hence, "clean-up" campaigns and other useful drives began to be frequently planned and carried out by pupils under skilled teacher-direction.

Summary of special developments to this point.—Reviewing the special examples that we have given to illustrate the historical development of project methods, we see (1) that as early as 1900 there was a clear-cut agitation for the introduction of more practical planning by pupils in manual training and that the term "project" was early used by Richards to designate pupil-exercises in this subject; (2) that a revision of kindergarten practices along similar lines was agitated about the same time and was gradually effected in certain progressive schools; (3) that assembly programs (particularly in Colonel Parker's schools) early furnished practical occasions for pupil-planning; (4) that construction and dramatization projects soon appeared in history and geography; (5) and that Dunn's work in civics (1909) tended to introduce some project methods in that subject. It would be possible to determine the origin of similar influential starting-points for project teaching in science, English composition, and other subjects. Sufficient has been given, however, to illustrate the historical development of project methods in particular subjects. Hence, we shall give only one further example, namely, the development of project methods in high-school agriculture, a subject in which project teaching has secured a somewhat precise legal meaning through the influence of the Smith-Hughes law for aiding vocational education and its interpretation by the Federal Board for Vocational Education.

Home projects in agriculture. Illustrates our definitions.—The description of project teaching in agriculture will illustrate very

¹ A. W. Dunn, *The Community and the Citizen*. Boston: D. C. Heath & Co., 1909. Pp. x+266.

well some of the points of definition with which we opened our articles, namely, (1) that, according to the dictionary, "a project is something of a practical nature thrown out for the consideration of its being done" and that "to project" means "to contrive, to devise, to scheme"; (2) that a pupil-project is a unit of practical activity planned by the pupils (or pupil); and (3) that a pupil-project gives the pupils practice in practical planning and makes them responsible for devising ways and means and selecting and rejecting methods of achieving some definite practical end.

Transfer from technical social life to school described by the Federal Board for Vocational Education.—Furthermore, our description of project teaching in agriculture will show how the idea of projecting a practical plan was gradually taken over from the general social situation (where the term project was used with its ordinary dictionary connotation) into the supervised practical work in agriculture in high schools, where it retains a meaning very similar to its use in general practical affairs. These facts come out clearly in the following quotation from the pamphlet on "The Home Project as a Phase of Vocational Agricultural Education" issued in September, 1918, by the Federal Board for Vocational Education:

For many years the term "project" has been used [among scientific workers of the Department of Agriculture] to designate carefully planned investigations in agricultural science covering a considerable period of time, frequently demanding several years for their completion. Such plans, including aims and methods, have been submitted by the agricultural experiment stations of the several states and approved by the Office of Experiment Stations in the States Relations Service of the United States Department of Agriculture.

More recently the term "project" under practically the same conditions has been applied to the projects in demonstration work and extension teaching carried out under the Smith-Lever Act. The term carries with it the idea of a program of importance, of some duration, and an expectation of certain tangible and valuable results.

In connection with the teaching of agriculture in secondary schools the idea of projects *at home*¹ crystallized and took on the name of "home

¹ Examples of home projects are the following: growing an acre of corn, or cotton, or some other crop; raising chickens, or cows, or other animals; improving the dairy barn or other farm buildings; keeping records of a dairy herd to improve it, etc. The Federal Board says, "Encourage the student to choose a sufficiently ambitious project. If he is in earnest, he will prefer a man-sized task to a childish or miniature project. A high-school boy knows he is not doing much farming if he is caring for one pig or rearing six chicks or managing a very small garden" [p. 11].

project" about 1908 in Massachusetts, receiving the sanction of the State Board of Education under suitable legislation in 1911. This plan, with modifications which do not change the principal points of the definition, had been adopted in most of the states which had constructive legislation on agriculture in the secondary schools previous to the enactment of the Smith-Hughes Act. In its work on secondary and elementary school agriculture, the United States Department of Agriculture had previously accepted the prevailing conception of the home project, issuing several publications on this basis.

Since the Federal Board for Vocational Education intends to develop and extend this plan, it seems undesirable that the term "home project" should be applied to less important exercises.

It is desirable also that the term "class project" shall be applied only to rather ambitious, well-planned lines of work for which we might use the term "home project" if they were located at home.¹

Rules for administering home projects.—The bulletin from which this quotation is taken outlines in detail the conditions under which "home projects" must be conducted in order to be approved. A summary view of these conditions is given in the following quotation:

THE ESSENTIALS OF A HOME PROJECT

1. A carefully drawn plan covering a considerable extent of time, with a definite aim, including some problems² new to the pupil and outlining with sufficient detail the methods to be employed. This plan should be written and should be an exhibit in connection with the second essential.

2. An agreement between parent, pupil and teacher, based upon the plan already prepared and so prepared as to eliminate later disagreements. The boy's financial privileges should be clearly stated.

3. Instruction in the school both in regular course and in special individual study to the end that the project work may be done intelligently and that the home may furnish the kind of laboratory practice best adapted to the school work.

4. Detailed records of method, time, cost, income, and other important factors which shall finally be summarized in—

¹ "The Home Project as a Phase of Vocational Agricultural Education," pp. 7-8. *Agricultural Series No. 3, Bulletin 21*. Washington: Federal Board for Vocational Education, 1918.

² The problems which a student confronts in doing his planning are illustrated by the following from a poultry project: "1. Shall I purchase pure-bred fowls or must I take over the farm flock as a basis for improvement? 2. Shall I aim at producing eggs for market, meat for market, breeding stock and eggs, or some other end? 3. Shall I be obliged to construct new houses, to renovate and remodel old houses, or may I use good houses now on the farm? 4. Shall I plan to grow poultry feed as a correlated plant project?" [p. 11].

5. A report including both a story and a complete accounting for the entire project period.

6. Supervision by a competent instructor of such a nature as to help the student to succeed in his project, to encourage him at times when difficulties arise and to hold him to his agreement; incidentally to impart instruction supplementing that of the classroom.

The supervisor should demand records of the student and should in turn make reports to his supervising officer.¹

Conclusion of historical view.—The examples which we have presented of the introduction of project teaching in manual training, the kindergarten, assembly programs, history, geography, civics, and agriculture illustrate how the movement has affected actual school practice from 1900 to the present. They show how the “new education” which was stimulated by the broader Froebelian teaching and which was propagated by Teachers College, Colonel Parker, and Professor Dewey, has gradually secured vigorous recognition in the actual project practice in many American schools.

IV. VALUES OF PRACTICE IN PLANNING PRACTICAL ACTIVITIES

Develops skill in practical planning.—The most obvious values of such project teaching as we have described are clearly implied in the fact that skill in the planning of practical activities is very necessary and useful in the world at large. Successful inventors, designers, architects, engineers, organizers, managing editors, dramatic producers, practical promoters, executives, farmers, housekeepers, etc., all have to have skill in planning practical activities. Project teaching anticipates this need by giving pupils practice in such practical planning in the ordinary school, instead of leaving it all to the “hard school of practical experience” after graduation.

Appeals to practical and executive instincts.—In addition to the obvious direct educational value of such practice in practical planning, project teaching has the additional value of securing the pupils’ attention through appeals to certain practical and executive instinctive interests, such as the instinctive interests in construction, problem-solving, communication, the management of people, etc.

¹ *Ibid.*, p. 9.

Such appeals, however, are not peculiar to project teaching since many other types of school activities may appeal to these same interests.

V. LIMITED SPHERE OF PROJECT TEACHING

Not the sole type of valuable activity and learning.—As we have defined project teaching, it is only one type of procedure needed in pupil training, not the sole type. There is much valuable activity and learning in social life (including the school) that does not consist of planning practical activities. In fact, a large part of the work and learning of artisans, clerks, bookkeepers, librarians, teachers, farmers, housekeepers, even executives and scientists, consists in the routine juggling of mental and material products. Hence we have a large place in the school for the learning of organized facts from textbooks and for drill in acquiring routine skills. It is quite significant that while the enthusiasm for project teaching is sweeping the country, at the same time the scientific investigators of methods of teaching reading, spelling, handwriting, and arithmetic are placing special emphasis upon the scientific diagnosis of each pupil's needs in each skill and the prescription by the teacher of specific practice exercises suited to each pupil's peculiar needs and deficiencies.

One of the social objectives and one of the modes of learning.—By conceiving project teaching as the planning by pupils of practical activities, we thus avoid the danger of overemphasizing it to the exclusion of other social objectives and other modes of learning. Skill in planning practical activities thus becomes one among many co-ordinate objectives of the school; and practice in such planning becomes one among several forms of learning.

VI. TECHNIQUE IN PROJECT TEACHING

Teacher needs wide knowledge, executive ability, and skill in directing problem-solving.—The successful direction of the practical planning of pupils calls for greater knowledge and skill on the part of the teacher than most other forms of teaching. (1) The *wide knowledge* needed is illustrated by some absurd mistakes in matters of scientific and historical fact which I have observed in the project teaching of even highly skilled, experienced teachers. These

mistakes arose from the fact that the solution of the practical project problems with which the pupils were concerned carried the class into scientific and historical fields where the teacher was not well informed. (2) In managing *group* projects, the teacher commonly needs skill in organizing and directing subdivided labor. She needs to be able to direct the organization of committees and to keep track of the varied activities of individuals who have been assigned special phases of the project. Thus, project teaching requires greater *executive ability* in the teacher than textbook recitations or routinized drill. (3) Finally, the teacher needs skill in guiding pupils in *problematic thinking*. Such skill is discussed at length in the chapter on "Problem Solving" in the author's *Types of Elementary Teaching*.¹ As brought out there, we find that the successful direction of problem-solving involves on the part of the teacher skill in getting the pupils to do each of the following: (1) To define the problem clearly; (2) To keep the problem in mind; (3) To make a variety of suggestions; (4) To criticize and evaluate each suggestion; (5) To organize the thinking systematically and to summarize from time to time its net outcomes.

VII. CONCLUSIONS

Regrettable absence of precise knowledge concerning practical planning.—It is to be regretted that we cannot give a more precise scientific discussion of giving pupils practice in practical planning than we have done. Unfortunately, we have little quantitative evidence to indicate how large a part practical planning plays in the lives of typical individuals as contrasted with the part played by the routine juggling of mental and material products or with mere leisurely rumination and enjoyment. Furthermore, we have little quantitative evidence to indicate the possibilities of improving pupils of various mental endowments in their ability to carry on practical planning; the best devices to use; and the cost and value to society of the improvements effected. About all we know is that practical planning or projecting does play an important part in the world's activities and that some schools are giving pupils practice in it along the lines described.

¹ Boston: Ginn & Co. (in press).

Contrast precise objective investigations in handwriting, etc.—In contrast with this confused condition we may note the illuminating progress that has been made by mathematically precise investigations of the social objectives and of the best methods in teaching handwriting, spelling, and beginning reading. Here the “newer education” of 1910–20, using exact statistical and experimental methods, has determined, for example, that quality 60 on the Ayres handwriting scale is all that is needed for ordinary business purposes; that in much skilled handwriting the letters are formed predominantly with the fingers; that some 3,000 common words are all a pupil needs to know how to spell for ordinary social purposes; that fifteen minutes a day of specific snappy drill is all that is needed in either handwriting or spelling in order to attain these objectives; that pupils who have not had good specific training in phonetics are likely to be inferior in accurate reading; and dozens of other reliable conclusions, such as are summarized in the *Eighteenth Yearbook of the National Society for the Study of Education, Part II*.¹

Problems needing investigation: social frequency, mental abilities, cost, etc.—Obviously, similar precise knowledge should be obtained concerning the social needs and standards and the best methods for giving pupils practice in practical planning. Such knowledge can come only from precise statistical and laboratory studies which would reveal such items as the following:

1. What persons in various occupations are primarily routine workers and what ones are primarily responsible for practical planning? Many subordinate problems come under this, such as the amount of routine work required of the thoughtful manager of enterprises; the number of occasions for practical planning that occur in the work of the routine bill clerk, sales clerk, lathe operator, etc.
2. What degrees of skill in practical planning can be acquired by persons of various degrees of mental ability (imbeciles, morons, and backward, average, and superior persons) from various amounts

¹“Fourth Report of the Committee on Economy of Time in Education,” *Eighteenth Yearbook of the National Society for the Study of Education, Part II*. Bloomington, Illinois: Public School Publishing Co., 1919.

of instruction? For example, Goddard states that a certain grade of feeble-minded person can learn to use machinery and care for animals but cannot plan.

3. What are the specific elements of skill in practical planning and how can these elements of skill be best practiced?

4. How can we measure the initial ability of each pupil in practical planning (i.e., before instruction) and the amount of improvement effected by the practice provided?

5. What is the cost to society of the improvements achieved with each grade of mental ability and the consequent desirability of continuing or discontinuing the training?

6. How much technical knowledge and skill should be given pupils before they are given practice in practical planning in each particular subject or vocation? Here, for example, profitable investigations could be conducted in successful schools for training architects, since the work of the latter involves so much planning and designing and also so much technical skill and precise technical information.

Inspiration from a great city planner.—It is likely that while the results of such investigations would lead to some skepticism concerning the value of practice in practical planning for students of low intellectual endowment, they would also greatly enhance our estimation of the value of such practice and training in the case of students possessing considerable natural talent for the original designing of practical enterprises. For the latter, we may well set up such educational objectives as we see realized in the achievements of great practical planners like Daniel Hudson Burnham, architect and planner of cities, who dominated the plans for the Chicago World's Fair, designed the first skyscraper of Chicago, the Flatiron Building of New York, and the famous city plans of many great cities, including the ambitious and beautiful project for the city plan of Chicago.

In Burnham's own words, we may find the large social value of skilled planning suggested in the following quotation of his motto for city planners:

Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work,

remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty.

Practical publications.—For teachers who desire a variety of practical suggestions for the actual organization of projects, the following publications are suggested:

“Second Report of the Committee on New Materials of Instruction,” *Twentieth Yearbook of the National Society for the Study of Education, Part I.* Bloomington, Illinois: Public School Publishing Co., 1921. \$1.30. Over two hundred examples briefly described, from the kindergarten through the junior high school.

Yearbooks and studies in education of the Francis W. Parker School. Chicago: Francis W. Parker School, 330 Webster Avenue. \$0.45 per volume. While each volume contains specific accounts of projects, Volume II (1913) on “The Morning Exercise” and Volume V (1918) on “The Course in Science” are particularly full of concrete descriptions of the actual organizing of projects.

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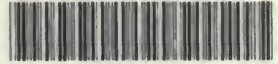
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